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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,300	03/24/2004	Kazuya Oda	1259-0247PUS1	3830

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EXAMINER

SELBY, GEVELL V

ART UNIT	PAPER NUMBER
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2622

NOTIFICATION DATE	DELIVERY MODE
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07/09/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/807,300

Applicant(s)

ODA ET AL.

Examiner

Gevell Selby

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-9 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 10-12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yosida US 6,803,955 in view of Aotsuka, US 7,148,920.**

In regard to claim 1, Yosida US 6,803,955, discloses an imaging apparatus having a correction circuit for correcting white balance according to the type of illumination light source, said imaging apparatus comprising:

an image sensor (see figure 2, element 100) having plural red pixels to convert red light photoelectrically, plural green pixels to convert green light photoelectrically, and plural blue pixels to convert blue light photoelectrically, said red, green and blue pixels being arranged in a predetermined pattern (see figure 3 and column 6, lines 40-65);

each of said red, green, and blue pixels having a main pixel (see figure 2, elements LR, LG, or LB) and a sub pixel (see figure 2, elements DR, DG, or DB),

spectral sensitivity of said main and sub pixels being different from each other (see figure 3 and column 7, lines 54-65).

The Yosida reference does not disclose a determiner for determining the type of said illumination light source by comparing a first signal being read from said main pixel with a second signal being read from said sub pixel.

Aotsuka, US 7,148,920, discloses an image pickup device with a determiner (see figure 8, element 265) for determining the type of said illumination light source by comparing a YE signal with a first signal being read from said main pixel and a second signal being read from said sub pixel (see column 7, line 48 to column 8, line 67 and column 12, lines 18-24), the determination is then applied to white balance correction (see column 9, lines 62 to column 10, line 5).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, to have a determiner for determining the type of said illumination light source by comparing a first signal being read from said main pixel with a second signal being read from said sub pixel, in order to distinguish the illumination source of a object with high precision to perform the appropriate image correction thus improving the color reproductivity.

4. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, as applied to claim 1 above, and further in view of Endo et al., JP 4298175.

In regard to claim 5, Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, discloses the imaging apparatus as claimed in claim 1. The Yosida reference does not disclose wherein a light receiving area of each of said main pixel is larger than that of each of said sub pixel.

Endo et al., JP 4298175, discloses a solid state imaging device wherein a light receiving area of each of said main pixel (1) is larger than that of each of said sub pixel (2), wherein the main pixel have higher photoelectric sensitive characteristics in order to provide a high dynamic range able to reproduce even a highlight part without generating a fixed pattern noise.

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, in further view of Endo et al., JP 4298175, to have wherein a light receiving area of each of said main pixel is larger than that of each of said sub pixel, in order to provide a high dynamic range able to reproduce even a highlight part without generating a fixed pattern noise.

In regard to claim 6, Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, in further view of Endo et al., JP 4298175, discloses an imaging apparatus as claimed in claim 5. The Yosida reference discloses wherein said imaging apparatus is a digital camera (see figure 1).

In regard to claim 7, Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, in further view of Endo et al., JP 4298175, discloses the imaging apparatus as claimed in

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claim 6. The Aotsuka reference discloses wherein said red, green and blue pixels are arranged in a honeycomb manner (see figure 11).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, in further view of Endo et al., JP 4298175, wherein said red, green and blue pixels are arranged in a honeycomb manner, in order to configure more pixel on the image sensor in a smaller space, thus decreasing the size of the device.

In regard to claim 8, Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, in further view of Endo et al., JP 4298175, discloses the imaging apparatus as claimed in claim 5. The Yosida reference discloses wherein a sensitivity wavelength range of said sub pixel is smaller than that of said main pixel (see figure 3).

In regard to claim 9, Yosida US 6,803,955, in view of Aotsuka, US 7,148,920, in further view of Endo et al., JP 4298175, discloses the imaging apparatus as claimed in claim 8. The Yosida reference discloses wherein said main pixel includes a color filter (Bayer color filter array) and a main photosensitive portion (CCD 105); and wherein each of said sub pixel includes said color filter (Bayer color filter array) common to the color filter of said main pixel, and a sub photosensitive portion (CCD 105).

Allowable Subject Matter

5. Claims 2-4 and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,515,275 discloses an apparatus for determining illumination type by measuring RGB, and IR light signals and comparing the sum of RGB to the IR signal.

US 6459,449, discloses a color reproduction correction device that determines the light source type.

Aotsuka, US 7,030,916, discloses an image pickup device with a fluorescent lamp distinguishing circuit.

Suemoto, US 2004/01355899, discloses an image pickup apparatus with main and sub pixels.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gvs



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